

Appln. No.: 10/075,150
Response dated May 16, 2006
Reply to Office Action mailed February 16, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (previously presented): A time-slicing digital video broadcasting transmitter system comprising:

a buffer that receives at least one of digital video content and digital audio content from an information service provider;

an encapsulator that receives the buffered content from the buffer and that forms at least one packet header for a current packet of a current burst of packets, wherein the current packet contains a first portion of the buffered content, wherein the at least one packet header contains time-slice information that includes a time-slice parameter specifying a relationship between the current packet of the current burst of packets and a subsequent burst of packets that contains a second portion of the buffered content; and

a digital video broadcast transmitter that transmits the current burst of packets and the subsequent burst of packets, thereby allowing a digital-video-broadcast receiver to enter a reduced power-consumption state for a duration, which is based at least in part on the time-slice parameter, between receiving the current burst of packets and receiving the subsequent burst of packets.

Claim 2 (previously presented): The time-slicing digital broadcasting transmitter system of claim 1, wherein the time-slice information specifies, in a way that is independent of a number of data packet-transmission intervals, an amount of time that elapses between transmission of the current packet and transmission of a first-transmitted packet of the subsequent burst of packets.

Claim 3 (original): The time-slicing digital broadcasting transmitter system of claim 1, wherein the time-slice information specifies a time-slice duration for transmitting the current burst of packets.

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Claim 4 (original): The time-slicing digital broadcasting transmitter system of claim 1, wherein the time-slice information includes a time-slice index for numbering originally transmitted bursts of packets.

Claim 5 (original): The time-slicing digital broadcasting transmitter system of claim 1, wherein the buffer is substantially large enough to store at least two full bursts of data from the information service provider and any data to be transmitted between transmission of the two full bursts of data.

Claim 6 (original): The time-slicing digital broadcasting transmitter system of claim 5, wherein the amount of time that elapses between transmitting the current packet and transmitting the first-transmitted packet of the subsequent burst is determined based at least in part upon how many packets will be transmitted between transmitting the current packet and transmitting the subsequent packet.

Claim 7 (original): The time-slicing digital broadcasting transmitter system of claim 2, wherein the amount of time that elapses between transmitting the current packet and transmitting the first-transmitted packet of the subsequent burst is determined based at least in part upon an amount of transmitter-idle time between transmission bursts.

Claim 8 (original): The time-slicing digital broadcasting transmitter system of claim 1, wherein the buffer comprises a buffer selected from the group consisting of: an elastic buffer, a first-in, first-out (FIFO) buffer, a ring buffer, and a dual buffer having separate input and output sections.

Claim 9 (original): The time-slicing digital broadcasting transmitter system of claim 1, wherein the encapsulator places the time-slice information into lower layer protocol packet header bits.

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Claim 10 (original): The time-slicing digital broadcasting transmitter system of claim 9, wherein the lower layer protocol is DVB DSM-CC section protocol.

Claim 11 (original): The time-slicing digital broadcasting transmitter system of claim 10, wherein the time-slice information is placed into at least one byte reserved, but not used, for media access control addressing.

Claim 12 (original): The time-slicing digital broadcasting transmitter system of claim 1, wherein the time-slice information includes a down-counting packet index for a plurality of packets within the current burst of packets.

Claim 13 (original): The time-slicing digital broadcasting transmitter system of claim 1, wherein the time-slice information includes a time slice boundary indication that indicates whether the current packet is a first-transmitted packet of the current burst of packets.

Claim 14 (previously presented): A mobile terminal that receives time-slicing digital video broadcast information, the mobile terminal comprising:

a digital video broadcast receiver that receives a current burst of packets and a subsequent burst of packets, wherein the current burst of packets includes a current packet that includes at least one of digital video content and digital audio content and that includes time-slice information, wherein the current burst of packets and the subsequent burst of packets have been transmitted by a digital video broadcast transmitter;

a buffer that receives the current burst of packets and the subsequent burst of packets; and an application processor that receives the current packet's buffered content and time-slice information from the buffer and that decodes the current packet's buffered time-slice information thereby extracting information that specifies a relationship between the current packet of the current burst of packets and the subsequent burst of packets, thereby allowing the mobile terminal to enter a reduced power-consumption state for a duration, which is based at least in part on the extracted information, between receiving the current burst of packets and receiving the subsequent burst of packets.

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Claim 15 (original): The mobile terminal of claim 14, wherein the time-slice information includes a down-counting packet index for a plurality of packets within the current burst of packets.

Claim 16 (original): The mobile terminal of claim 15, wherein the time-slice information includes a time slice boundary indication that indicates whether the current packet is a first-transmitted packet of the current burst of packets.

Claim 17 (original): The mobile terminal of claim 14, wherein the time-slice information includes an up-counting packet index for a plurality of packets within the current burst of packets.

Claim 18 (original): The mobile terminal of claim 17, wherein the time-slice information includes a time slice boundary indication that indicates whether the current packet is a last-transmitted packet of the current burst of packets.

Claim 19 (original): The mobile terminal of claim 14, wherein the time-slice information includes a next burst indication that indicates whether the subsequent burst of packets is an original burst or a copy burst.

Claim 20 (previously presented): The mobile terminal of claim 14, wherein the time-slice information specifies, in a way that is independent of a number of data packet-transmission intervals, an amount of time between receiving the current packet and a first-received packet of the subsequent burst of packets.

Claim 21 (original): The mobile terminal of claim 14, wherein the time-slice information is decoded from lower layer protocol packet header bits.

Claim 22 (original): The mobile terminal of claim 21, wherein the lower layer protocol is DVB DSM-CC section protocol.

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Claim 23 (original): The mobile terminal of claim 22, wherein the time-slice information is decoded from at least one byte reserved, but not used, for media access control addressing.

Claim 24 (previously presented): A time-slicing digital video broadcasting system comprising:

a digital video broadcast transmitter system that transmits bursts of packets, including a current burst of packets and a subsequent burst of packets, wherein the current burst of packets includes a current packet that includes at least one of digital video content and digital audio content from at least one data service of at least one information service provider and that includes time-slice information that specifies a relationship between the current packet of the current burst of packets and the subsequent burst of packets; and

a digital video broadcast receiver system that receives the current burst of packets and the subsequent burst of packets and that decodes the time-slice information thereby extracting information that specifies the relationship between the current packet and the subsequent burst of packets, thereby allowing the digital video broadcast receiver system to enter a reduced power-consumption state for a duration, which is based at least in part on the extracted information, between receiving the current burst of packets and receiving the subsequent burst of packets.

Claim 25 (previously presented): The time-slicing digital broadcasting system of claim 24, wherein the time-slice information specifies, in a way that is independent of a number of data packet-transmission intervals, an amount of time between transmitting the current packet and a first-transmitted packet of the subsequent burst of packets.

Claim 26 (original): The time-slicing digital broadcasting system of claim 25, wherein the subsequent burst of packets is a copy of the current burst of packets.

Claim 27 (original): The time-slicing digital broadcasting system of claim 24, wherein the transmitter comprises an encapsulator that places the time-slice information into lower layer protocol packet header bits.

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Claim 28 (original): The time-slicing digital broadcasting system of claim 27, wherein the lower layer protocol is DVB DSM-CC section protocol.

Claim 29 (original): The time-slicing digital broadcasting system of claim 28, wherein the time-slice information is placed into at least one byte reserved, but not used, for media access control addressing.

Claim 30 (previously presented): A method of transmitting time-slicing digital video broadcast information, the method comprising:

buffering at least one of digital video content and digital audio content received from at least one information service provider; and

forming a plurality of packets of a current burst of packets, wherein the plurality of packets includes portions of the buffered content and a plurality of respective packet headers for the plurality of packets, wherein the packet headers contain time-slice information that specifies a plurality of relationships between the plurality of packets of the current burst of packets and a subsequent burst of packets, thereby allowing a digital-video-broadcast receiver to enter a reduced power-consumption state for a duration, which is based at least in part on the time-slice information, between receiving the current burst of packets and receiving the subsequent burst of packets.

Claim 31 (original): The method of claim 30, wherein the time-slice information specifies a plurality of different amounts of time between transmitting a plurality of packets of the current burst and transmitting a first-transmitted packet of the subsequent burst.

Claim 32 (original): The method of claim 30, wherein the time-slice information specifies a plurality of different packet indexes for a plurality of packets of the current burst.

Claim 33 (original): The method of claim 30, wherein the time-slice information specifies whether the subsequent burst is a copy of the current burst.

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Claim 34 (original): The method of claim 30, wherein the time-slice information specifies a duration of the current burst.

Claim 35 (original): The method of claim 30, wherein the time-slice information is placed into lower layer protocol packet header bits.

Claim 36 (original): The method of claim 35, wherein the lower layer protocol is DVB DSM-CC section protocol.

Claim 37 (original): The method of claim 36, wherein the time-slice information is placed into at least one byte reserved, but not used, for media access control addressing.

Claim 38 (previously presented): A method of receiving time-slicing digital video broadcast information, the method comprising:

receiving a current packet of a current burst of packets and a subsequent burst of packets, wherein the current packet includes time-slice information, wherein the current packet and the subsequent burst of packets include at least one of digital video content and digital audio content from an information service provider and have been transmitted by a digital video broadcast transmitter, wherein the time-slice information specifies a relationship between the current packet of the current burst of packets and the subsequent burst of packets;

buffering the time-slice information; and

decoding the buffered time-slice information to extract information that specifies the relationship between the current packet and the subsequent burst of packets, thereby allowing a digital video broadcast receiver to enter a reduced power-consumption state for a duration, which is based at least in part on the extracted information, between receiving the current burst of packets and receiving the subsequent burst of packets.

Claim 39 (previously presented): The method of claim 38, wherein the time-slice information specifies, in a way that is independent of a number of data packet-transmission

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intervals, an amount of time between transmitting the current packet and transmitting the first-transmitted packet of the subsequent burst.

Claim 40 (original): The method of claim 38, wherein the time-slice information is decoded from lower layer protocol packet header bits.

Claim 41 (original): The method of claim 40, wherein the lower layer protocol is DVB DSM-CC section protocol.

Claim 42 (original): The method of claim 41, wherein the time-slice information is decoded from at least one byte that is reserved, but not used, for media access control addressing.

Claim 43 (original): A computer-readable medium containing computer-executable instructions for transmitting time-slicing digital broadcast information by performing the steps recited in claim 30.

Claim 44 (original): A computer-readable medium containing computer-executable instructions for transmitting time-slicing digital broadcast information by performing the steps recited in claim 31.

Claim 45 (original): A computer-readable medium containing computer-executable instructions for transmitting time-slicing digital broadcast information by performing the steps recited in claim 35.

Claim 46 (original): A computer-readable medium containing computer-executable instructions for transmitting time-slicing digital broadcast information by performing the steps recited in claim 36.

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Claim 47 (original): A computer-readable medium containing computer-executable instructions for transmitting time-slicing digital broadcast information by performing the steps recited in claim 37.

Claim 48 (original): A computer-readable medium containing computer-executable instructions for receiving time-slicing digital broadcast information by performing the steps recited in claim 39.

Claim 49 (original): A computer-readable medium containing computer-executable instructions for receiving time-slicing digital broadcast information by performing the steps recited in claim 40.

Claim 50 (original): A computer-readable medium containing computer-executable instructions for receiving time-slicing digital broadcast information by performing the steps recited in claim 41.

Claim 51 (original): A computer-readable medium containing computer-executable instructions for receiving time-slicing digital broadcast information by performing the steps recited in claim 42.